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Roman harbours on the Red Sea are described in a number of literary sources, the most important of which are Strabo's Geographia, Pliny's Naturalis Historia, Ptolemy's Geographia and the anonymous Periplus Maris Erythraei (hereafter Periplus). Leuke Kome, Myos Hormos and Berenike were the key commercial hubs on the Red Sea in the 1st and 2nd c. A.D. for trade with India.1 Myos Hormos and Berenike have been identified and investigated: Berenike was sited just south of the large peninsula of Ras Benas, while Quseir al-Qadim is generally regarded as the site of Myos Hormos (fig. 1).2 The exact location of Leuke Kome, however, remains uncertain. Most scholars believe that it should be located in the area of modern Aynuna, c.5 km from the coast at the mouth of the Gulf of Aqaba,3 surveys of the area have revealed extensive architecture, including a tower and a necropolis.4 Although the evidence is meager, this identification is generally accepted. Nevertheless, a few scholars have suggested that Leuke Kome is located farther south. F.-L. Gatier and J.-F. Salles analysed some of the features of Leuke Kome described by the Periplus and cautiously suggested locating it at al-Wajh or possibly Qarna.5 H. Cuvigny has also suggested al-Wajh on the basis of the description provided by the Periplus and the site's geographical setting.6 Most recently, J. Hill has posited the identification of al-Wajh with Leuke Kome on the basis of Chinese texts.7

The first goal of this article is to explore in greater detail the hypothesis put forward by Gatier and Salles, Cuvigny, and Hill, and to demonstrate that the equation of Leuke Kome with al-Wajh is the best possible one. The second is to show how the location of Leuke Kome can be used to advance our understanding of the development of the Roman port system over time.

The location of Leuke Kome

The two main sources on Leuke Kome are Strabo and the Periplus.8 In Book 16, Strabo tells the story of Aelius Gallus’ failed military expedition which aimed to conquer S Arabia.9

Fig. 14. Enclosed within the rectangle are extensions to the west of the necropolis partially excavated by G. Brusin in the 1940s.

A monumental necropolis revealed by Brusin29 is still partly visible to the west of the town centre (fig. 4 in squares 5b-5c). Further tombs were recognized on the W side of this sector, and the photographs taken in 2003 allow us to identify its continuation to the west (fig. 14). In the new sector the precincts are arranged in at least three rows parallel to the course of the road. They are partly concealed by modern buildings.

Conclusions

Up to this point our research has been performed mainly on the aerial images. It needs to be confirmed and complemented with data acquired from other sources, such as geo-physical prospection, laser scanning, and excavation. It is to be hoped that the collection of data on this GIS platform will also help to focus future excavations (always the most expensive and the most destructive solution) on those areas where there is the most to be gained.

Acknowledgements

We are grateful to the following researchers who helped us design the GIS Antaeus supporting our work: Stefano Ansoldi, Massimiliano Hofer, Dan Nelu (University of Udine) and Giorgio Denis De Tina (Civici Musei, Udine). We are also grateful to Gerald Moore for revising our paper in English.

29 Brusin (supra n.3).
The information that the Periplus supplies on Leuke Kome is far more accurate than Strabo since it is a first-hand guide for merchants sailing the Red Sea. It reads as follows:

Strabo reports that the troops were afflicted with ailments of various kinds and that Gallus lost many of his ships and men due to storms and faulty navigation. For these reasons, 14 days later, Gallus decided to berth at Leuke Kome within the territory of the Nabataean kingdom. This harbour also serves in a way the function of a port of trade for the craft, none large, that come to it loaded with freight from Arabia. For that reason, as a safeguard there is dispatched for duty in it a customs officer to deal with the (duty of a) fourth on incoming merchandise as well as a centurion with a detachment of soldiers. Immediately after this the Suda begins the country of Arabia, extending lengthwise far down the Erythraean Sea.

The Periplus' account has been studied several times in order to calculate the exact location of Leuke Kome and its role in the Nabataean or Roman fiscal administration. As L. Casson points out, we must infer that a journey of "two to three runs" would have been about 1,000 or 1,500 stadia, or 100 to 150 nautical miles (equivalent to between 185 and 278 km). The traditional identification of Leuke Kome with Aynuna does not fit the Periplus' description. Table 1 compares the details of the Periplus with Aynuna's actual geographical features:

<table>
<thead>
<tr>
<th>Periplus' account</th>
<th>Geographic characteristics of Aynuna</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Leuke Kome lies to the left of Berenike (i.e., northwards) and eastwards from Myos Hormos.</td>
<td>Aynuna is not located eastwards from Myos Hormos, but NNE.</td>
</tr>
<tr>
<td>2 or 3 days are required to travel from Myos Hormos to Leuke Kome (i.e., between 185 and 278 km).</td>
<td>The distance between Quseir al-Qadim and Aynuna is 240 km in a straight line, but this does not fit into the Periplus' description, as explained below.</td>
</tr>
<tr>
<td>3. Leuke Kome is next to a gulf.</td>
<td>Aynuna lies next to the Gulf of Aqaba.</td>
</tr>
<tr>
<td>4. Leuke Kome is on or near a boundary between the Nabataean kingdom and what the anonymous author calls Arabia.</td>
<td>It is uncertain whether Aynuna is at the southern limit of the Nabataean kingdom, since the precise extension of its southern border remains unknown.</td>
</tr>
</tbody>
</table>

11 For the translation, see Casson 1989, 61-63.
13 Casson 1989, 143.
14 The southern extension of the Nabataean kingdom has been matter of discussion for many scholars. See, e.g., Sartre 1981, 77-92.
Of the four comparanda, just one is applicable to Aynuna, one is uncertain, and two are not compatible. Thus the identification of Aynuna with Leuke Kome is unconvincing. It is useful to further analyse the first and the second points of Table 1.

The Periplus states that Leuke Kome lies eastwards from Myos Hormos. The words εἰς τὴν ἄνωτολήν (eastwards) would suit both a location eastwards and north-eastwards from Myos Hormos. However, if we look at the relative location of Myos Hormos and Aynuna, we find that the latter is 18° NNE from Myos Hormos, so we would expect that the anonymous author would have said εἰς τὸν βορείν “northwards”, rather than εἰς τὴν ἄνωτολήν, “eastwards”.

Point 2 is more significant. First, the actual distance between Quseir al-Qadim and Aynuna is about 130 nautical miles (240 km) as the crow flies, a distance which seems to fit the Periplus’ description. But the crucial point is that sailing ships do not follow a straight line, and this is especially true in the Red Sea during the 1st c. A.D., when sailing from south to north was accomplished by sailing a zigzag path upwind. If we assume an average offset of 45° from the intended line of direction, then the actual distance covered by a ship going from Myos Hormos to Aynuna would be increased by roughly 40% beyond the straight-line distance, which works out at an overall actual distance of ca. 250 nautical miles (330 km). This is not compatible with the 100-150 nautical miles (185-278 km) attested by the Periplus. Furthermore, this is sailing against the wind, which is much slower than running downwind. In such conditions, the possibility of accomplishing the journey in two or three days becomes even more unrealistic.

To the evidence in Table 1 we may add that the particular regimen of winds in the N part of the Red Sea would make Aynuna a very difficult port to reach for ships coming from the south. In the area around Aynuna the winds blow year round from north to south, making a voyage to the port from the south extremely difficult (see further below).

Despite these difficulties, the equation of Aynuna with Leuke Kome has been favoured by most scholars due to a lack of alternate excavated sites on the Arabian coast of the Red Sea, and because the correct identification of the site of Myos Hormos with Quseir al-Qadim is still relatively recent. Since the first half of the 19th c. Abu Shaar (mod. Deir Umm Deheis) was considered the most likely candidate for this port, whereas Quseir al-Qadim was believed to be Leukos Limen. Such a reconstruction was based largely on the information provided by Ptolemy, who placed Leukos Limen south of Myos Hormos, in the area of modern Quseir al-Qadim.

20 A gate inscription reads εἰς οὐσίν ἐρεχθέων (see Bagnall and Sheridan 1994a, 162-63; Sidebotham 1994, 141 and 158); one ostrakon reads εἴ τήν ἄνωτολήν / εἰς τὴν ἄνωτολήν τετράγωνον. Bagnall and Sheridan 1994a, 162-63; Sidebotham 1994, 133; Bagnall and Sheridan 1994a, 159-60; Sidebotham 1996.

21 Sidebotham uncovered a fort that was sited to monitor international trade and patrol the area, its chronology does not relate to activity during the time of the Periplus and thus negates its identification as Myos Hormos.

In 1993, D. Peacock suggested that Quseir al-Qadim was the ancient site of Myos Hormos, basing his argument on comparisons of ancient descriptions of Myos Hormos with modern satellite images. Later, in the Eastern Desert at al-Zerqa on the Coptos to Quseir al-Qadim road, several ostraka were found that pointed to Myos Hormos as the terminus of that road. Excavations at the site between 1999 and 2003 have yielded written evidence that has helped bolster its identification, including two papyri that mention "Myos Hormos at the Red Sea". It is now clear that the erroneous location of Myos Hormos affected abilities to locate Leuke Kome too, since its identification with Aynuna appeared in connection with the identification of Abu Shaar as Myos Hormos. Indeed, L. Kirwan, the first scholar to postulate that Leuke Kome was located at Aynuna, used these correlations to reach his conclusion:

Taking a line approximately due east from Myos Hormos — and one can hardly expect absolute precision from the Periplus — would carry to the al-Muwaylih-Duba area. But 'crossing the gulf which lies alongside' presents a problem. This must mean passing across the entrance to the gulf, probably the Gulf of Aqaba rather than the Gulf of Suez because the crossing appears to occur towards the end of the voyage, as one nears the harbour of Leuke Kome. If this interpretation is correct, it entails a line from Myos Hormos somewhat north of east, and this calls for a search along the whole coast between Duba and the entrance to the Gulf of Aqaba.

Kirwan’s reconstruction is not without problems, as he himself admitted. Starting from Abu Shaar, he could not find a suitable place on the Arabian coast for Leuke Kome. In order to avoid the problem, he adjusted the account of the Periplus to the geography of N Arabia (“one can hardly expect absolute precision from the Periplus”). Since the area of Duba was not suitable for Leuke Kome, he searched the coast for a more convenient place and found it in Aynuna. His reconstruction is based on a weak premise. The position of Myos Hormos at Quseir al-Qadim renders Aynuna an impossible option for Leuke Kome. It is impossible to rectify the geographical relationship between Aynuna and Quseir al-Qadim with the Periplus’ account. Nonetheless, Kirwan’s methodology was correct and

25 Kirwan 1979, 57.
26 Kirwan 1979, 59.
can be used again. Taking a line due east from Quseir al-Qadim, one arrives on the Arabian
cost northwards from S Arabia. Strabo describes Egra as situated within the
Nabataean kingdom, but this is contradicted by the Periplus, which claims that Leuke Kome
is located at al-Wajh than at Aynuna or anywhere else north of al-Wajh.37

I believe the evidence can be re-interpreted as follows. Strabo’s Egra should be located at
Mada’in Salih, where Gallus stopped during his withdrawal from southern Arabia.34
Strabo’s mistake was to confuse the city at which Gallus stopped with the port from which
he later embarked. That port was clearly Leuke Kome, which is exactly where Gallus had
previously left his fleet to await his return. Musil was right in believing that Gallus reached

31 There is no correspondence between the names Egra provided by Strabo and the name Egra as
found in the inscriptions in Mada’in Salih. The equation Egra = Hegra seems reasonable enough (see below).
The Loeb edition of Strabo reports the variants Hegra and Negrana.
33 Musil 1926, 299.
34 On Strabo’s use of Gallus as his source, see Biffi 2002, 14-22.
35 Strab. 16.4.24. In both cases, if we consider an average of c.20 km per day, the distances are
compatible.
36 Vegetius (1.27) claims that the average rate for an antiqua legio was 30 km per day. Gichon (1981,
59-60) argues that Gallus’ army marched a maximum of 25 km per day. Goldsworthy (1996, 109-
10) postulates that a Roman legio, even while marching on good terrain, could cover no more
than 28-32 km per day; such an estimate would be reduced drastically if they were forced to
cover desert terrain.
37 In this case it is difficult to estimate the average distance covered per day, particularly as the
voyage was difficult and the fleet encountered numerous problems due to faulty navigation.
38 For a general discussion on the sizes of ports in the Roman world and the information one might
inter from them, see Schörle forthcoming.

This site was previously identified as Egra, the port from which Gallus departed, accord-
ing to Strabo, on his way back to Alexandria. According to Strabo, it took Gallus 11 days to travel from Egra to Myos Hormos, Mada’in
Salih is roughly 150 km from al-Wajh, which would be a 7- or 8-day march for the army,
assuming an average march of 20 km per day.35 If we add to this 2 or 3 days (which the
Periplus states are necessary to sail from Leuke Kome to Myos Hormos), and perhaps 1
day of preparation for the departure, the entire journey would have lasted between 10 and 12
days, which is perfectly compatible with Strabo’s statement. His mistake was to assume
that Egra was a seaport, whereas it was an emporion in the desert. Correcting this mistake,
we can then explain how the equation of al-Wajh with Leuke Kome suits the accounts of
Strabo and the Periplus. I begin by showing that the distances Strabo reports are compat-
ible with al-Wajh.

TABLE 2

<table>
<thead>
<tr>
<th>Strabo’s account</th>
<th>Distances</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 days, Leuke Kome to Negrana*</td>
<td>c.1600 km from al-Wajh to Najran</td>
</tr>
<tr>
<td>51 days, Negrana to Egra*</td>
<td>c.1100 km from Najran to Mada’in Salih</td>
</tr>
<tr>
<td>15 days, Cleopatris to Leuke Kome*</td>
<td>c.600 km from Suez to al-Wajh</td>
</tr>
<tr>
<td>* days of march</td>
<td>* days of sailing</td>
</tr>
</tbody>
</table>

The distance between Najran and al-Wajh is c.1600 km, whereas the distance between
Negrana and al-Wajh is c.1100 km; Strabo reports that it takes 51 days to walk this latter
route.36 Furthermore, Gallus’ 15-day voyage from Cleopatris to Leuke Kome is more rea-
able if Leuke Kome is located at al-Wajh than at Aynuna or anywhere else north of al-Wajh.37

In terms of its physical configuration, al-Wajh easily fits the description of Leuke Kome.
The settlement lies on the edge of a large plain bisected by the broad and fertile Wadi
Hamid, a suitable place for Gallus’ army to rest. The sheltered waters of the sizeable bay
(c.25 ha in area) could easily have accommodated a large fleet at anchor.38 Indeed, what
appear to be ancient structures, including a submerged mole, line the S side of the bay.

The last step is to check the viability of al-Wajh as a candidate for Leuke Kome against
the description of the most accurate of our sources, the Periplus (Table 3).

The correspondences are precise in every respect, and we may conclude that the cor-
rect location of Leuke Kome is al-Wajh. With regard to point 2, the straight-line distance
between Myos Hormos and al-Wajh is 108 nautical miles (175 km). Again, sailing ships

On the location of Leuke Kome
did not travel in a straight line, but this distance is perfectly compatible with the Periplus within the parameters of Red Sea navigation.

### TABLE 3

**COMPARISON BETWEEN THE PERIPLUS’ DESCRIPTION AND FEATURES OF AYNUNA AND AL-WAJH**

<table>
<thead>
<tr>
<th>Periplus’ account</th>
<th>Aynuna</th>
<th>al-Wajh</th>
</tr>
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<tr>
<td>1. Leuke Kome lies to the left of Berenike (i.e., northwards), and eastwards from Myos Hormos.</td>
<td>Aynuna is not located eastwards from Myos Hormos, but northward.</td>
<td>Al-Wajh is located precisely eastwards of Quseir al-Qadim.</td>
</tr>
<tr>
<td>2. 2 or 3 days are required to travel from Myos Hormos to Leuke Kome (i.e., between 185 and 278 km).</td>
<td>The distance between Myos Hormos and Aynuna is more than 2 or 3 days of sailing.</td>
<td>Al-Wajh is no more than 2 or 3 days of sailing from Quseir al-Qadim.</td>
</tr>
<tr>
<td>3. Leuke Kome is next to a gulf.</td>
<td>Aynuna lies next to the Gulf of Aqaba.</td>
<td>Al-Wajh lies close to a gulf.</td>
</tr>
<tr>
<td>4. Leuke Kome is on or near a boundary between the Nabataean kingdom and what the anonymous author calls Arabia.</td>
<td>It is uncertain whether Aynuna was on the S border of the Nabataean kingdom, since the precise extension of its southern border remains unclear.</td>
<td>Al-Wajh may lie in a possible “border” area, as it lies on the same latitude as Mada'in Salih (26° 48’ 0” N; al-Wajh: 26° 13’ 60” N), which was the southernmost Nabataean outpost in the Arabian Desert.</td>
</tr>
</tbody>
</table>

On point 4, we may draw some inferences regarding Leuke Kome’s rôle in the economy of the area. The Periplus says that the port was a customs point. Its link to Hegra suggests the existence of a customs area in the south of the Nabataean kingdom (and later in the provincia Arabia), one that operated through two main gates: an inland gate, which controlled caravans coming from the desert; and a coastal gate, controlling cargoes coming from the Red Sea. This suggests a well-organised system, perhaps established by the Nabataeans and inherited and improved by the Romans (a centuria is attested at Leuke Kome).39

**Leuke Kome and the Red Sea’s port system**

Resolving the location of Leuke Kome permits us to understand more fully the economic dynamics operating in the Red Sea between the 1st c. B.C. and the 2nd c. A.D., and to estimate more accurately the relative importance of settlements in the region. During the 1st c. A.D. two of the Red Sea’s main ports, Myos Hormos and Leuke Kome, lay at approximately the same latitude on opposite coasts; a third, Berenike, lay farther south. All of them are said to have been in contact with India. According to the Elder Pliny, Berenike was the main hub from which ships going to S India would depart:40


The region in India reached by such ships was called Limyriki. Only big ships could manage such a voyage, as attested by the Periplus, because it involved a long passage across open ocean using the monsoon winds:41

πλην δε εις τα ιμπορα τατη μεγεριστα πλοια δια ταν δροκον και το πληθο τω τυπερεως και του μελαβαθουν. The biggest ships in these ports of trade carry full loads because of the volume and quantity of pepper and malabathron.

The success of Berenike is easily understandable in light of the geographical and meteorological characteristics of the Red Sea. The regimen of the winds in this sea is very peculiar: at latitudes south of 20° N, southerly winds blow from May to September, while the rest of the year they are northerly; at latitudes north of 20° N, winds blow from north all year long. Therefore, sailing northwards in the northern gulfs of the Red Sea was difficult for square-sailed vessels, a condition compounded by the generally shallower coastal waters in this area.42 Berenike was favoured by its geographical position at the southernmost point on the Egyptian coast, not far from the latitude that marked a change in the wind regimen. This also explains why, during the Ptolemaic age, the heavy ἑλπανταγγος, ships transporting elephants from Africa to Egypt, moored at Berenike;43 it would have been difficult for ships of that tonnage to travel farther north to Myos Hormos.44

If Berenike were the chief hub for direct trade with S India, what rôle did ports like Myos Hormos and Leuke Kome serve? According to the Periplus, Leuke Kome was the northern terminus of a maritime route running from north to south in the Red Sea. Numerous ships reached Leuke Kome each year, but none of them was large (τις τοιος ουκ εγεγοισκ). This, however, does not necessarily mean that Leuke Kome played a minor rôle in the economy of the region. The Periplus, after all, calls Leuke Kome an emporion, a term never used by that author for Berenike or Myos Hormos. This is a crucial point: despite the smaller size of ships that made for Leuke Kome, it was considered an important port and the volume of trade passing through it was large.

The apparent contradiction between the size of the ships and the volume of trade can be resolved by reviewing the geographical characteristics of the Red Sea. Leuke Kome lay

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41 Periplus 56, transl. L. Casson 1989, 85; on the size of cargo ships, see Pomey and Tchernia 1978; Casson 1990, 194.
42 The codex uses μετα, but I accept the emendment suggested by De Romanis 1996, 178. For a complete description of the characteristics of the Red Sea and of the regimen of the winds, see Strab. 17.1.45. See also Sidebotham 1986a, 51-52; De Romanis 1996, 19-28; Whitewright 2007.
43 Over the Ptolemaic period, Berenike experienced a period of decline, beginning as soon as the import of elephants from Africa had ceased under Ptolemy V in c.205-180 B.C. (see Sidebotham 1986a, 4).
firmly above 20° N in an area of shallow water. As northerly winds dominate year round, ships were forced to sail close to wind in order to reach this port from the south. The only way to make this voyage easier and safer was to use numerous ships of relatively smaller size. We can then postulate a parallel situation at Myos Hormos, located at approximately the same latitude. From our sources we understand that Myos Hormos was used as a terminal for trade both within the Red Sea and with N India by way of cabotage.46 It follows, then, that during the 1st c. A.D. large ships from Berenike capable of navigating the open ocean undertook direct voyages to S India. Myos Hormos and Leuke Kome filled a different role: ships working from there traded within the Red Sea or (in the case of Myos Hormos) within the same latitude. From our sources we understand that Myos Hormos was used as a terminal for trade both within the Red Sea and with N India. It is also possible that goods brought from S India were transshipped through Berenike before arriving at Myos Hormos in smaller hulls, whence they were conveyed to Koptos and on to Alexandria.47

I am not suggesting that such an organisation was in effect from the moment the Romans conquered Egypt, but this pattern does appear to have been operative during the 1st and 2nd c. A.D. A fluid situation is reflected in excavations conducted along the Myos Hormos/ Nile and Berenike/Nile routes, as well as at the two ports themselves. There is no obvious difference in the material from the two sites that would suggest alternate sources (e.g., N India and S India) for the items traded there.48 On the other hand, it is reasonably clear that after an initial commercial ‘boom’, which lasted until the middle of the 1st c. A.D., the volume of trade passing through Myos Hormos began to diminish, to Berenike’s advantage.49 One possible reason might be that ports like Myos Hormos and Leuke Kome represented a ‘hybrid solution’: while Berenike was the only suitable port for big ships coming from the south, Myos Hormos and Leuke Kome were not the best ports even for smaller ships coming from that direction. Instead, the crews of smaller ships coming to the Red Sea would have preferred to moor at the northermost point (either Klysma or Aila) in order to avoid a long transit of goods through the desert. But winds complicated the matter, and there was a lack of infrastructure that could have connected the northern ports on the Red Sea with the hinterland and facilitated the conveyance of a large quantity of merchandise coming from the East. Myos Hormos and Leuke Kome were closer to the main emporia of their respective regions by comparison with Berenike, and this resulted in shorter journeys through the desert: the length of the land route between Myos Hormos and Coptos is 174 km,50 while that between Coptos and Berenike is 392 km.51

This reconstruction of the Red Sea port system may also provide the key to understanding developments during late antiquity. At least from the 3rd c. A.D. the decline of Myos Hormos was so dire that the Romans gradually abandoned the site.52 Explanations for its nadir range from the 3rd-c. crisis, to attacks of the Blemmyes, to problems connected with the silting of the port.53 But the crisis and the attacks affected Berenike as well; one might expect that Berenike’s more peripheral location and consequent difficulty with regional control and protection would have caused its abandonment. Nevertheless, although a period of decline occurred during the 3rd c. A.D., Berenike recovered its rôle as an international entrepôt between the 4th and 6th c.54 This suggests that the crisis that occurred in the region was not irreversible,55 and that the reason for the decline of Myos Hormos lies elsewhere.56

I suggest that the reason lies in the nature of the system itself during the first two centuries A.D. Something occurred that made the ‘hybrid’ positions of Myos Hormos and Leuke Kome weaker than before, effectively pushing these two ports out of the system. The 3rd-c. crisis accelerated the change, but did not cause it. It is more likely that the change started in the 2nd c. A.D. when two public works projects transformed the situation in the area of the northern Red Sea. Under Trajan a road, the via Nova Traiana, was built, which served as a link between the port of Aila (mod. Aqaba) and Syria.57 He also opened (or re-opened) the canal linking the Nile to Klysma (close to mod. Suez).58 These projects broke the isolation of the northern ports of the Red Sea, making them more suitable for trade.59 After the 3rd-c. crisis, the emporia at Aila and Klysma took over the rôle of Myos Hormos and Leuke Kome for merchant ships coming from the southern Red Sea.60 The infrastructure developed under Trajan made the ‘hybrid solution’ an inconvenient one. Another factor that probably fostered this process was a partial change in commercial routes in the Red Sea and across the Indian Ocean in the 3rd and 4th c. As several scholars have pointed out, during and immediately after the crisis of the 3rd c. the rôle of Aksumite and Arab middlemen in managing the commerce with India seems to have greatly increased.61 This would have led to a contraction in the volume of direct trade between the Roman empire and India. Roman traders would now find it more convenient to sail to emporia such as Adulis in the Aksumite Kingdom and there buy Indian goods imported by local traders. Although the influence that these middlemen had may be overestimated, sources attest to a well-established route linking the empire with such large emporia as Adulis.62 With a reliance on shipping confined to the Red Sea, the convenience of using northern ports such as Klysma and Aila became even greater.

54 Sidebotham 2002b.
55 See the general discussion on the impact of these ‘invasions’ of the area in Fournet 2002 and Rathbone 2002.
56 Pekary 1968, 18; 1992, 120.
57 Trajan was not the first ruler to engage in building a canal in this area. It was attempted by the pharaoh Necho, by Darius I and by Ptolemy II, as attested in Herodotus (2.158) and Diodorus (1.33.8-12). On the canal, see Faville 1902-3, 66-75; Calderini 1920, 43-44; Bourdon 1925; Posener 1938; Silpestein 1963; Oertel 1964; De Romanis 1996, 71-95; Aubert 2004.
58 The rôle of the canal in fostering trade in the area has been questioned by scholars. Although some believe that the canal could have been used by ships from Alexandria to reach Klysma and the Red Sea (see, e.g., Young 2001, 75-79, with bibliography), problems with this hypothesis have been raised by Mayerson (1996, 121), Aubert (2004), Adams (2007, 35) and Cooper (2009). As far as this paper is concerned, it makes little difference whether the canal was used by ships or small boats. Whichever the case, Trajan’s canal linked Klysma with the Nile and opened up a route that was quite difficult to traverse before its construction. Such a route made it possible to connect the port on the Red Sea to Alexandria.
60 Munro-Hay 1996; Whitehouse 1996; Nappo, ibid.
61 Cosmas Indicopleustes 2.54.6.

47 As suggested, with strong arguments, by Whitewright 2007, 84-86.
48 As summarised by Tomber 2008, 83-87.
49 For Myos Hormos, see Cuvigny 2003; for Berenike, see Sidebotham 2002a.
51 Sidebotham 2002a, 415-38.
52 Cuvigny 2003, 201-3.
53 Whitcomb 1996, 758; Young 2001, 125-30; Cuvigny, ibid.
This suggests that the transport system operating in the Red Sea region was not monolithic but experienced several readjustments, depending on changes in routes of trade, but also on the influence of the imperial infrastructure. Identifying the correct location of Leuke Kome is crucial for developing a more complete picture of Red Sea trade from the 1st c. A.D. to late antiquity.

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The building inscription from the fort at Udruh and Aelius Flavianus, tetrarchic praeae of Palaestina
Caillan Davenport

In JRA 21 (2008), D. Kennedy and H. Falahat published an important new inscription from Udruh in Jordan.¹ It provides the first official confirmation that legio VI Ferrata was stationed at Udruh during the ‘first tetrarchy’ (A.D. 293-305) after its transfer from Caparcoata. The text also records the names of three imperial officials: a dux, Aurelius Hercalides, vir perfectissimus; the provincial praeae, Aelius Flavianus, vir clarissimus; and the legionary prefect, Aurelius Mucianus: ²

Restitutoribus urbis² terrarum, fundatoribus ubique / pacom, donatoribus universarum ³

gentium barbarorum./ Imp(eratoribus) Caes(arius) Gaio Aurelio Valerio Diocletiano
[et M(arco) Aur(elio) Val(erio) Maximiano] p(is) f(idelis) invict(is) August(i) et /
(Felicio) Valerio Constantio et Galerio Valerio Maximiano fortiss(imis) ac nobiliss(imis)
Caes(arius),/ Kastra (sic) leg(ionis) VI Ferr(ae) (fidelis) c(ons(t)ans) ex fundamentis / restituta
insistentibus Aur(elio) Hercalide v(ir) perfectissimo duce (sic) et / Ael(io) Flaviano v(ir) c(larissimo) praeside provinciae curante / Aure(lio) Muciano praef(eccto) eiusdem leg(ionis) (sic)

Kennedy and Falahat provided a thorough commentary on the inscription and its implications for the military history of the region. The object of this note is to re-evaluate the position of the senatorial governor Aelius Flavianus in light of this new evidence by placing his career in the socio-political context of the tetrarchic period.

The career of Aelius Flavianus

Kennedy and Falahat identified the Aelius Flavianus in the new inscription with the Flavianus recorded by Eusebius as governor of Palaestina in 303.³ Flavianus had left office by 304, when he was replaced by Urbanus.⁴ This suggests that the new inscription should be dated c.303, before the change of governor. However, Kennedy and Falahat did not notice an inscription from Petra, also dating to the reign of Diocletian, which attests a ⁵

vir clarissimus by the name of Aelius Flavianus as praeae. My first suggestion is that the Flavianus of the Udruh inscription and the Flavianus of the Petra inscription are one and the same man. The Petra inscription reads:

Excelsa pi(etae) / maxim(a) virtute p(atri) / p(iissimo)²⁰ (sic)? / [Imp(erator)] Caes(ar) Aelio
Aurelio Valerio Dio(Cletiano) p(iis) f(idelis) invicto Augusto / (sic) Flavianu(s) v(ir) 
clarissimus / p(aesae) p(atri) / maxim(a)

2. The text of the inscription reads urbis, but orbis was surely intended. A number of other oddities in the Udruh text are not resolvable based on the published photograph.
3. Kennedy and Falahat 2008, 163-64. For Flavianus, see PLRE I Flavianus 1; Euseb., Mart. Pal. (S) pref. (l) 1,1, 1; Barnes 1982, 152. The province continued to be officially known as Syria Palaestina in c.310ff (AE 1964, 196 = 1950, 1618).
4. PLRE I Urbanus 2; Barnes 1982, 152.
5. Tracy 1999, 305-7 = AE 1999, 1702. The text was originally published separately as IGLS XXI vol. IV, 40, 41, 53.
6. It is difficult to expand the abbreviation p. p. with any certainty. Tracy (1999, 307) read p(atiri) p(iissimo), though he also considered p(atrono) p(terpetu) as the former reading would be unprecedented on an imperial dedication; p(atiri) p(atrior) would be more appropriate. However, as Tracy correctly noted, pater patriae usually follows the emperor’s name and is generally placed last among his titles.